

AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (Currently Amended): An orthopaedic support for comfortably supporting the ankle of a wearer, comprising:

an outer shell formed for fitting about the lower leg of the wearer;

a molded pad bonded to said shell;

said pad having a ~~surface~~ base layer; ~~and~~

said pad having a plurality of molded substantially hollow structures to provide differing levels of cushioning support for the wearer of the orthopaedic support at different areas of the pad, at least some of said structures having a different dimension than others of said structures; and

said hollow structures extending substantially perpendicular from said base layer;

said hollow structures being integrally molded with said base layer;

wherein said molded structures comprise walls, said walls providing cushioning support for the ankle and having a self supporting free standing construction even without inflating or otherwise filling said molded structures with air, liquid, gel ~~and~~ or the like.

Claim 2 (Original): An orthopaedic support in accordance with 1 wherein an overmold substantially surrounds said pad and said shell substantially sealing together said orthopaedic support.

Claim 3 (Original): An orthopaedic support as defined in claim 1 further comprising an overmold molded onto said shell, said pad being bonded to said overmold.

Claim 4 (Original): An orthopaedic support as defined in claim 1 further comprising means for securing said ankle support around the lower leg; and a heel strap for securing said orthopaedic support.

Claim 5 (Original): An orthopaedic support as defined in claim 1 wherein said pad bonded to said shell forms a fluid-filled bladder.

Claim 6 (Original): An orthopaedic support as defined in claim 1 wherein an inner liner of cloth is secured to said pad on the surface of said pad facing the lower leg of the user.

Claim 7 (Original): An orthopaedic support as defined in claim 6 wherein said liner is integrated with said pad.

Claim 8 (Original): An orthopaedic support in accordance with claim 7 wherein said liner includes openings allowing air to pass in and out of said structures.

Claim 9 (Original): An orthopaedic support as defined in claim 1, wherein said pad further comprised a plurality of fingers extending from said pad to said outer shell.

Claim 10 (Original): An orthopaedic support as defined in claim 9, wherein said fingers are integrally molded with said pad.

B, Claim 11 (Original): An orthopaedic support as defined in claim 9, wherein some of said fingers have a different length than others of said fingers.

Claim 12 (Cancelled)

Claim 13 (Currently Amended): An orthopaedic support for comfortably supporting a select area of the anatomy, said support comprising:

a substantially rigid shell; and

an injection molded resilient pad between said shell and the anatomy of the user, said pad configured with geometric shaped cells providing cushioning and support;

said pad including a base layer, and said cells being integrally molded with said base layer and extending substantially perpendicular from said base layer;

wherein said cells comprise walls, the structure of said walls providing cushioning support for the select area of the anatomy and having a self-supporting free-standing construction even without inflating the cells with air or otherwise filling said cells with liquid, gel or the like.

Claim 14 (Original): An orthopaedic support as defined in claim 13 further comprising an overmold molded onto said shell, said pad being connected to said overmold.

Claim 15 (Original): An orthopaedic support as defined in claim 13 wherein said pad is a bladder having a plurality of cells having cushioning geometric shapes and protrusions, each cell with predetermined size, depth, and wall thickness providing varying levels of localized support and cushion in different areas of said support.

Claim 16 (Original): An orthopaedic support as defined in claim 15 wherein said geometric shapes for said bladder are selected from the group consisting of ribs, cylinders, honeycomb, and regular and irregular polygons.

Claim 17 (Original): An orthopaedic support as defined in claim 15 wherein channels are provided between said cells for allowing a fluid to pass between and among said cells, creating a massaging effect on the ankle and promoting blood flow.

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Claim 18 (Original): An orthopaedic support as defined in claim 17 wherein channels are provided through an outer wall of said pad to at least one of said cells to allow water to pass between and among said cells for hot and cold therapies.

Claim 19 (Original): An orthopaedic support as defined in claim 17 wherein said support further comprises inlet and outlet valves for allowing entry and removal of air and liquids.

Claim 20 (Original): An orthopaedic support as defined in claim 13 wherein said pad further comprises a foam core for softer inner cushion.

Claim 21 (Original): An orthopaedic support as defined in claim 13 wherein a co-molded lip around said shell and around said pad seals said pad such that air is trapped between said pad and said shell, creating a bladder with air cushion.

Claim 22 (Original): An orthopaedic support as defined in claim 13 wherein said pad is molded directly onto said shell as channels, domes, and other supportive geometrical shapes to cushion and to support the anatomy.

Claim 23 (Original): an orthopaedic support as defined in claim 13 wherein said pad includes a plurality of fingers extending from said pad to said shell.

Claim 24 (Currently Amended): an orthopaedic support comprising:
a substantially rigid shell formed to fit a limb of a user;
an injection molded resilient pad for cushioning the shell to the limb;
said injection molded pad being integrally molded in a single molding step;
and

said pad including a base layer and integrally molded structures protruding from said base layer, said structures having a self supporting free standing construction even without inflating or otherwise filling said structures with air, liquid, gel or the like.

Claim 25 (Original): An orthopaedic support as defined in claim 24 wherein said pad includes interconnected cells, and further comprising a heel bladder fluidically coupled to said pad for varying the pressure exerted by said pad on the limb of the user.

B, Claim 26 (Original): An orthopaedic support pad as defined in claim 24 wherein said pad is a bladder having geometrically shaped cells to provide differing levels of localized cushioning and a plurality of channels molded between said cells to allow air and fluid to pass between said cells.

Claim 27 (Original): An orthopaedic support pad as defined in claim 26 further comprising fluid inlets and outlets to allow entry and removal of fluid from said pad for hot and cold therapy.

Claim 28 (Cancelled)

Claim 29 (Cancelled)

Claim 30 (Original): An orthopaedic support as defined in claim 24 wherein a breathable liner covers said pad.

Claim 31 (Original): An orthopaedic support as defined in claim 24 wherein said pad includes a plurality of integrally-molded fingers extending from said pad to said shell.

Claim 32 (Original): An orthopaedic support as defined in claim 24 further comprising an overmold molded onto said shell.

Claim 33 (Currently Amended): An orthopaedic support for comfortably supporting the ankle comprising:

an ankle support formed for fitting about the lower leg; having appropriate configuration to support the ankle;

said ankle support comprising a substantially rigid outer shell and a molded pad for cushioning;

said pad having ~~an inner surface~~ a base layer and an ~~outer layer~~, ~~said inner surface~~ inner construction including resilient material having cells therein for providing resilient support to the ankle; and

said base layer and said cells being integrally molded together;

said pad being bonded to said outer shell; and

wherein said outer shell has a least one opening to allow air to escape from space in between said outer shell and said pad, said cells providing resilient support to the ankle from the structure of the cells and having a self supporting free standing construction even without being filled with air, liquid, gel or the like.

B, Claim 34 (Original): An orthopaedic support as defined in claim 33 wherein at least some of said air spaces are filled with foam for cushioning.

Claim 35 (Cancelled)

Claim 36 (Original): An orthopaedic support as defined in claim 33 wherein said pad includes a plurality of fingers extending from said pad toward said shell.

Claim 37 (Original): An orthopaedic support as defined in claim 33 further comprising an overmold molded onto said shell.

Claim 38 (Original): An orthopaedic support as defined in claim 37 wherein said pad is bonded to said overmold.

Claim 39 (Cancelled): An orthopaedic support as defined in claim 38 wherein said overmold includes a ridge extending about the periphery of the overmold, said pad having an outer edge that engages with said ridge.

Claim 40 (Original): An orthopaedic support as defined in claim 33 wherein said pad includes a plurality of air holes to prevent formation of a bladder between said pad and said shell.

Claim 41 (Cancelled)

Claim 42 (Cancelled)

Claim 43 (Cancelled)

Claim 44 (Cancelled)

Claim 45 (Cancelled)

Claim 46 (Cancelled)

Claim 47 (Currently Amended): An orthopaedic support for comfortably supporting the ankle of a wearer, comprising:

an outer shell formed for fitting about the lower leg of the wearer;

a molded pad bonded to said shell;

said pad having a plurality of molded structures in between said pad and said shell to provide cushioning support for the wearer;

wherein said molded structures comprise walls, the structure of said walls providing cushioning support for the select area of the anatomy and having a self supporting free standing construction without inflating said structures with air or otherwise filling said structures with liquid, gel or the like.

Claim 48 (Currently Amended): An orthopaedic support for comfortably supporting a select area of the anatomy, said support comprising:

a substantially rigid shell; and

an injection molded resilient pad between said shell and the anatomy of the user; said pad being configured with geometric shaped cells providing cushioning and support; and

said pad having a base layer with said cells being integrally molded with said base layer, and extending substantially perpendicular to said base layer;

said pad being bonded to said shell to form a fluid-filled bladder; and

said cells having a self supporting and free standing configuration in the absence of fluid.

Claim 49 (Original): An orthopaedic support as defined in claim 48, further comprising a molded pad bonded to said shell, said pad having a substantially continuous surface and having a plurality of molded structures to provide differing levels of

cushioning support for the wearer of the orthopaedic support at different areas of the pad, said substantially continuous surface of said pad being adapted to be placed against a portion of the anatomy to be supported.

Claim 50 (Original): An orthopaedic support for comfortably supporting the ankle of a wearer, comprising:

an outer shell formed for fitting about the lower leg of the wearer;

a molded pad bonded to said shell;

said pad having a surface; and

said pad having a plurality of molded structures to provide differing levels of cushioning support for the wearer of the orthopaedic support at different areas of the pad, at least some of said structures having a different dimension than others of said structures;

wherein said pad further comprises a plurality of fingers extending from said pad to said outer shell;

some of said fingers having a different length than others of said fingers;

and

said support having a malleolar region that is adapted to be placed against a malleolus of an ankle, said malleolar region having fingers of a greater length than fingers in other regions of said support.

Claim 51 (Withdrawn): An orthopaedic support for comfortably supporting a select area of the anatomy, said support comprising:

a substantially rigid shell; and

an injection molded resilient pad between said shell and the anatomy of the user, said pad configured with geometric shaped cells providing cushioning and support;

wherein said pad is a bladder having a plurality of cells have cushioning geometric shapes and protrusions, each cell with predetermined size, depth, and wall thickness providing varying levels of localized support and cushion in different areas of said support;

wherein channels are provided between said cells for allowing a fluid to pass between and among said cells, creating a massaging effect on the ankle and promoting blood flow; and

wherein channels are provided through an outer wall of said pad to at least one of said cells for allowing a fluid to flow into said pad for hot and cold therapies.

Claim 52 (Original): An orthopaedic support comprising:

a substantially rigid shell formed to fit a limb of a user;

an injection molded pad for cushioning the shell to the limb;

said injection molded pad being integrally molded in a single molding step;

wherein said pad is a bladder having geometrically shaped cells to provide differing levels of localized cushioning and a plurality of channels molded between said cells to allow air and fluid to pass between said cells;

wherein at least one cell defines a closed space forming an internal bladder.

Claim 53 (Cancelled)

Claim 54 (Original): An orthopaedic support for comfortably supporting the ankle comprising:

an ankle support formed for fitting about the lower leg, having appropriate configuration to support the ankle;

said ankle support comprising a substantially rigid outer shell and a molded pad for cushioning;

said pad having an inner surface and an outer layer, said inner surface including resilient material having cells therein for providing resilient support to the ankle; and

said pad being bonded to said outer shell;

wherein said outer shell has at least one opening to allow air to escape from space in between said outer shell and said pad, said cells providing resilient support to the ankle from the structure of the cells even without being filled with air;

wherein at least some of said air spaces are filled with foam for cushioning;
and

wherein said foam surrounds but not covers the malleolus.

Claim 55 (Original): An orthopaedic support for comfortably supporting the ankle comprising:

an ankle support formed for fitting about the lower leg, having appropriate configuration to support the ankle;

said ankle support comprising a substantially rigid outer shell and a molded pad for cushioning;

said pad having an inner surface and an outer layer, said inner surface including resilient material having cells therein for providing resilient support to the ankle; and

said pad being bonded to said outer shell;

wherein said outer shell has at least one opening to allow air to escape from space in between said outer shell and said pad, said cells providing resilient support to the ankle from the structure of the cells even without being filled with air;

wherein said orthopaedic support further comprises an overmold molded onto said shell;

wherein said pad is bonded to said overmold; and

wherein said overmold includes a ridge extending about the periphery of the overmold, said pad having an outer edge that engages with said ridge.

Claim 56 (Original): An orthopaedic support for comfortably supporting the ankle comprising:

an ankle support formed for fitting about the lower leg, having appropriate configuration to support the ankle;

said ankle support comprising a substantially rigid outer shell and a molded pad for cushioning;

said pad having an inner surface and an outer layer, said inner surface including resilient material having cells therein for providing resilient support to the ankle; and

said pad being bonded to said outer shell;

wherein said outer shell has at least one opening to allow air to escape from space in between said outer shell and said pad, said cells providing resilient support to the ankle from the structure of the cells even without being filled with air; and

wherein said pad has a non-uniform skin thickness, said pad having at least one region having skin that is thicker than at least one other region, in order to improve the function of the support.

Claim 57 (Cancelled)

Claim 58 (Cancelled)

Claim 59 (Currently Amended): An orthopaedic support for comfortably supporting the ankle comprising:

an ankle support formed for fitting about the lower leg, having appropriate configuration to support the ankle;

B. said ankle support comprising a substantially rigid outer shell and a molded pad for cushioning;

said pad having an ~~inner surface and an~~ outer layer, ~~said inner surface including and~~ resilient material ~~therein~~ mounted on said outer layer and formed in an open structure facing said outer shell for providing resilient support to the ankle;

said pad having said outer layer for facing toward the ankle, and said ~~inner surface~~ resilient material providing varying deflection as the ankle applies force to said pad;

~~said open structure of~~ said pad being very flexible upon initial deflection of said pad by engagement by the ankle; and said open structure having firmness and increased resilient resistance upon further deflection of said pad by the ankle; and

said resilient material having a self supporting free standing construction even in the absence of inflating said molded pad or portion thereof with air, liquid, gel or the like.

Claim 60 (Original): An orthopaedic support for comfortably supporting the ankle as defined in claim 59, wherein said open structure of said pad includes fingers which are

initially compressed for flexible deflection, and also includes geometric cells providing firmness and increased resilient resistance upon further deflection.

Claim 61 (Re-presented – formerly claim 12): An orthopaedic support for comfortably supporting the ankle of a wearer, comprising:

an outer shell formed for fitting about the lower leg of the wearer;

a molded pad bonded to said shell;

said pad having a surface;

said pad having a plurality of molded substantially hollow structures to provide differing levels of cushioning support for the wearer of the orthopaedic support at different areas of the pad, at least some of said structures having a different dimension than others of said structures;

wherein said molded structures comprise walls, said walls providing cushioning support for the ankle even without inflating or otherwise filling said molded structures with air, liquid, gel or the like; and

said pad further comprising a plurality of fingers extending from said pad to said outer shell, said fingers being integrally molded with said pad; and some of said fingers having a different length than others of said fingers.

Claim 62 (Re-presented – formerly dependent claim 28): An orthopaedic support comprising:

a substantially rigid shell formed to fit a limb of a user;

an injection molded pad for cushioning the shell to the limb;

said injection molded pad being integrally molded in a single molding step;

said pad comprising bladder having geometrically shaped cells to provide differing levels of localized cushioning and a plurality of channels molded between said cells to allow air and fluid to pass between a said cells; and

wherein at least one cell defines a closed space forming an internal bladder

Claim 63 (Re-presented – formerly dependent claim 29): An orthopaedic support comprising:

a substantially rigid shell formed to fit a limb of a user;

an injection molded pad for cushioning the shell to the limb;
said injection molded pad being integrally molded in a single molding step;
and

wherein said shell further comprises a shell frame and a shell core which is removably mounted within said shell.

Claim 64 (Re-presented – formerly claim 35): An orthopaedic support for comfortably supporting the ankle comprising:

an ankle support formed for fitting about the lower leg, having appropriate configuration to support the ankle;

said ankle support comprising a substantially rigid outer shell and a molded pad for cushioning;

said pad having an inner surface and an outer layer; said inner surface including resilient material having cells therein for providing resilient support to the ankle;

said pad being bonded to said outer shell;

wherein said outer shell has at least one opening to allow air to escape from space in between said outer shell and said pad, said cells providing resilient support to the ankle from the structure of the cells even without being filled with air, liquid, gel or the like;

wherein at least some of said air spaces are filled with foam for cushioning, and said foam surrounds but does not cover the malleolus.

Claim 65 (Re-presented – formerly dependent claim 39): An orthopaedic support for comfortably supporting the ankle comprising:

an ankle support formed for fitting about the lower leg, having appropriate configuration to support the ankle;

said ankle support comprising a substantially rigid outer shell and a molded pad for cushioning;

said pad having an inner surface and an outer layer; said inner surface including resilient material having cells therein for providing resilient support to the ankle; and

said pad being bonded to said outer shell;

wherein said outer shell has at least one opening to allow air to escape from space in between said outer shell and said pad, said cells providing resilient support to the ankle from the structure of the cells even without being filled with air, liquid, gel or the like; and

an overmold molded onto said shell, with said pad being bonded to said overmold, and said overmold including a ridge extending about the periphery of the overmold, said pad having an outer edge that engages with said ridge.

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Claim 66 (Re-presented – formerly dependent claim 41): An orthopaedic support for comfortably supporting the ankle comprising:

an ankle support formed for fitting about the lower leg, having appropriate configuration to support the ankle;

said ankle support comprising a substantially rigid outer shell and a molded pad for cushioning;

said pad having an inner surface and an outer layer; said inner surface including resilient material having cells therein for providing resilient support to the ankle; and

said pad being bonded to said outer shell;

wherein said outer shell has at least one opening to allow air to escape from space in between said outer shell and said pad, said cells providing resilient support to the ankle from the structure of the cells even without being filled with air, liquid, gel or the like; and

said pad having a non-uniform skin thickness, said pad having at least one region having skin that is thicker than at least one other region, in order to improve the function of the support.

Claim 67 (New): An orthopaedic support for comfortably supporting the ankle of a wearer, comprising:

an outer shell formed for fitting about the lower leg of the wearer;

a molded pad bonded to said shell;

said pad having a base layer;

said pad having a plurality of molded structures extending substantially perpendicularly from said base layer to provide differing levels of cushioning support for the wearer of the orthopaedic support at different areas of the pad, at least some of said structures having a different dimension than others of said structures;

said structures being integrally molded with said base layer; and

wherein said molded structures comprise walls, said walls providing cushioning support for the ankle and having a self supporting free standing construction even without inflating or otherwise filling said molded structures with air, liquid, gel or the like.

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Claim 68 (New): An orthopaedic support for comfortably supporting the ankle of a wearer, comprising:

an outer shell formed for fitting about the lower leg of the wearer;

a molded pad bonded to said shell;

said pad having a base layer;

said pad having a plurality of molded structures extending outward from said base layer to provide differing levels of cushioning support for the wearer of the orthopaedic support at different areas of the pad, at least some of said structures having a different dimension than others of said structures;

said hollow structures being integrally molded with said base layer; and

wherein said molded structures provide cushioning support for the ankle and have a self supporting free standing construction even without inflating or otherwise filling said molded structures with air, liquid, gel or the like.